



Increase Monitoring Capability with EcoMapper AUV

Customers Increase Environmental Monitoring Capability with EcoMapper AUV

The **U.S. Geological Survey Illinois Water Science Center** has purchased the first EcoMapper® water quality AUV from YSI Incorporated's Integrated Systems & Services Division.

The USGS is working with a nuclear power station to monitor the water temperature of the station's man-made 5,000-acre cooling reservoir. Under EPA NPDES guidelines, the station must monitor its waste heat discharge to stay within specified temperature guidelines.

The [EcoMapper](#) has allowed the USGS to map the dispersion of waste heat within the reservoir and evaluate the impact of the discharge on lake circulation and overall water quality.

The USGS is using the suite of water quality sensors on the autonomous vehicle---such as dissolved oxygen, pH, and turbidity---to further assess the health of the reservoir for recreational uses and help evaluate the impact of area land use on lake water quality. The organization is using the side-scan sonar to inspect the integrity of sub-surface structures and the echo sounder data to update bathymetric maps and evaluate sediment accumulation in the main body of the reservoir and an emergency pond.

Two other customers are putting the EcoMapper AUV to use differently.

Purdue University has employed the EcoMapper in the research of environmental fluid mechanics. A team led by [Dr. Cary Troy](#) is conducting field studies of the impact of thermal stratification on the water quality of lakes.

Dr. Troy is planning to use the EcoMapper in southern Lake Michigan to map seasonal changes in water quality as they relate to changes in the position of the thermocline on the lake shelf. This study will help to improve understanding of how onshore-offshore exchange is maintained during the thermally stratified summer season in the Great Lakes.

The **Alaska Department of Fish and Game** is using the vehicle to collect geo-referenced high resolution water quality data in Kodiak Island lakes, particularly temperature and chlorophyll-a fluorescence, which can greatly affect the production and survival of wild salmon stocks. The EcoMapper autonomously maps whole-lake conditions, providing high-quality spatial and temporal environmental data, and is an efficacious alternative to extrapolating conditions from dispersed data points.

YSI released the EcoMapper AUV (autonomous underwater vehicle) in June and is conducting series of hands-on demonstrations for water monitoring programs who want to increase environmental data collection (water quality and bathymetry) at a relatively low cost.

For more information, visit ysi.com/ecomapper.

**Please note that the mention of the USGS in the above article does not imply its specific endorsement of this YSI product.*



Launch of EcoMapper AUV in cooling reservoir



EcoMapper begins its mapping mission